REBUTTAL TESTIMONY OF
BURTON G. MALKIEL
ON BEHALF OF
SOUTH CAROLINA ELECTRIC AND GAS COMPANY
DOCKET NO. 2004-178-E

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Burton G. Malkiel and my business address is Princeton University, Princeton, NJ 08544-1021.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to certain criticisms of the analyses and opinions contained in my prefiled direct testimony that were made by Glenn Watkins in his prefiled direct testimony.

Q. THE CONSUMER ADVOCATE'S WITNESS, GLENN WATKINS, STATES THAT SHORT-TERM DEBT SHOULD BE INCLUDED IN SCE&G'S CAPITAL STRUCTURE. PLEASE DISCUSS HIS ARGUMENTS AND EXPLAIN WHY SHORT-TERM DEBT IS NOT INCLUDED IN YOUR ANALYSIS.

A. Mr. Watkins makes two arguments in support of including short-term debt in SCE&G's capital structure. First, he argues that some short-term (current) assets such as materials and supplies are included in the rate base. Second, he argues that short-term debt is a source of relatively inexpensive capital and to ignore it would provide "a windfall to shareholders at the expense of customers' rates" (Watkins[1] p. 8).

Watkins' first argument ignores a fundamental rule of corporate finance: *"Fluctuating short-term assets such as inventories should be financed with short-term debt. Permanent long-term assets should be financed with long-term debt."* A policy of financing permanent capital requirements with short-term debt would subject the company to the risks of having to refinance permanent capital requirements under potentially unfavorable financial market conditions. In addition, short-term debt is used to finance the portion of construction work in progress ("CWIP") that is not included in the rate base. Thus, assets in the rate base are not being financed with short-term debt. Short-term debt finances only the part of CWIP that is not yet included in the rate base.

Mr. Watkins' second argument is that short-term debt is a less expensive form of finance. This statement is not correct. It is true that short-term rates recently have been well below long-term rates. This situation tends to occur during recessionary periods in the economy when the Federal Reserve is engaging in policy of easing monetary conditions. But during periods when the Federal Reserve is engaged in a restrictive monetary policy, short-term rates can rise to double digit levels well above long-term rates as they have on several occasions in the past. In fact, today, the Federal Reserve has been reversing its very easy money policy and they have raised short-term rates at each of their recent meetings.

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[1] All references in this rebuttal testimony are to the prefiled direct testimony of Glenn Watkins in Docket No. 2004-178-E.

For the reasons stated above, Mr. Watkins' inclusion of short term debt in the Company's capital structure is erroneous, violates fundamental principles of corporate finance, and should be rejected by the Commission.

Q. MR. WATKINS USES A DIVIDEND YIELD DIFFERENT FROM YOURS FOR THE GROUP OF COMPARABLE COMPANIES YOU BOTH EMPLOY. DO YOU AGREE WITH HIS CALCULATIONS?

A. In my calculations I use the previous year's dividend and then I gross it up by multiplying it by unity plus the growth rate. This is the correct mathematical formulation for the annual discounted cash flow ("DCF") calculation I have employed. Mr. Watkins makes a slightly different assumption which has the effect of lowering the dividend yield for the following year. While the difference may be small, in determining dividend yields in a DCF analysis, Mr. Watkins, as with the inclusion of short-term debt in his recommended capital structure for SCE&G, has again ignored standard and widely accepted principles of corporate finance in making his recommendation. (Watkins p. 19).

Q. MR. WATKINS USES FIVE METHODS OF ESTIMATING THE FUTURE GROWTH RATES REQUIRED IN THE DCF CALCULATIONS. WHY HAVE YOU USED ONLY ONE METHOD?

A. I have used what I consider to be the most reliable estimates of the growth rates that influence stock market prices. In addition to my teaching and research, I have performed studies of expectations data and their influence on market prices throughout my academic career. I have also, through my work as a director of several financial corporations, gained first hand experience concerning the methods used by professional investors to analyze stock market prices. I am convinced that the most accurate growth rate estimates are those provided by security analysts and that the other growth estimates used by Mr. Watkins are not as accurate nor are they indicative of the rates used by investors to judge the appropriateness of the market prices of particular corporations. My academic work and real world experience also teach that this fact holds just as well for public utility companies as it does for industrial corporations.

Q. MR. WATKINS EMPLOYS A CAPITAL ASSET PRICING MODEL ("CAPM") APPROACH TO ESTIMATE THE COST OF EQUITY CAPITAL. PLEASE COMMENT ON HIS CALCULATIONS.

A. I have not changed my opinion that the CAPM is likely to produce unreliably low estimates of the cost of equity capital. This shortcoming is one of the reasons I did not perform a CAPM analysis in my prefiled direct testimony in this case and in the 2002 rate case. To further support my reasoning and years of academic and real world experience, I note that, during the first four years of the 2000s (2000, 2001, 2002, and 2003), low beta stocks have enjoyed higher rates of return than high beta stocks. This is exactly the opposite of what the CAPM theory predicts. In general, CAPM estimates tend to understate the required rate of return for low beta stocks.

Q. I KNOW YOU DO NOT BELIEVE THE CAPITAL ASSET PRICING MODEL PRODUCES RELIABLE ESTIMATES OF THE COST OF CAPITAL, BUT WOULD YOU NONETHELESS COMMENT ON WHETHER MR. WATKINS HAS APPLIED THE MODEL CORRECTLY?

A. He has not applied the model correctly. Importantly and specifically, he has not calculated the historical risk premium correctly. Watkins notes (Watkins p. 27) that the (arithmetic) mean large company stock return is 12.4 percent. But the historical small company stock return was 17.5 percent (according to Ibbotson Associates). Neither SCE&G alone nor SCANA is a large company stock. SCANA is what is called a "mid-cap" stock. Thus, the appropriate historical stock return for a mid-cap stock is between 12.4 and 17.5 percent. Thus, a correct CAPM calculation would not be 9.9 to 10.2 percent (Watkins p. 28) but a number at least two percentage points higher, yielding, according to Mr. Watkins' CAPM analysis, an estimated cost of capital somewhere between 11.9 and 12.2 percent.

In addition, as I have argued above, there is considerable question whether the required rate of return for low beta stocks is, in fact, lower than in high beta stocks. Thus, I believe Watkins CAPM calculations are simply not correct and result in unreasonably low estimates of SCE&G's cost of capital.

Q. MR. WATKINS SUGGESTS THAT THERE WERE TWO OFFSETS TO THE DILUTION SUFFERED BY SHAREHOLDERS WHEN FLOTATION COSTS REQUIRE THAT MORE EQUITY IS ISSUED THAN COMMENSURATE WITH THE NET FUNDS RAISED BY THE COMPANY. WOULD YOU COMMENT ON HIS ARGUMENTS?

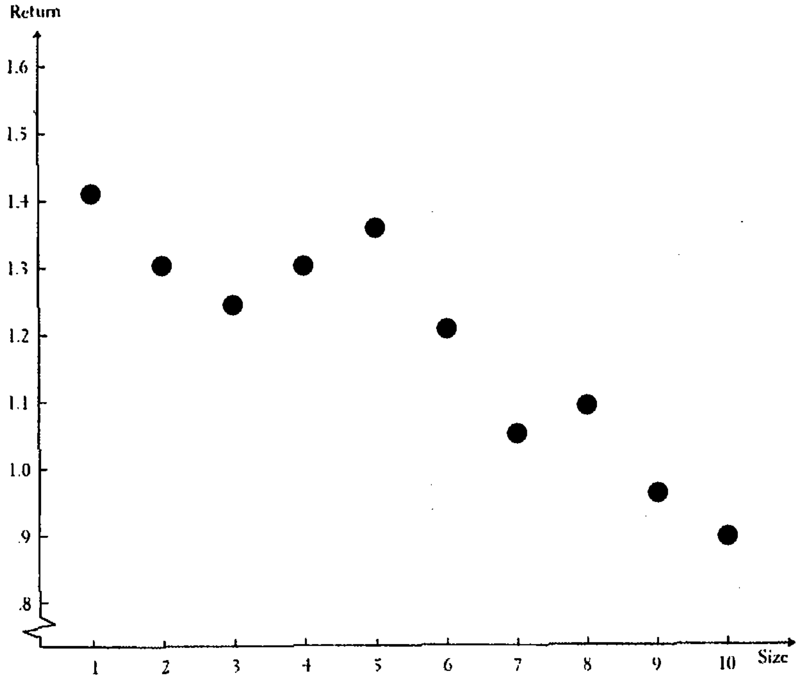
A. First, Mr. Watkins notes that the recent equity issue was sold at a premium to book value even after accounting for flotation costs. While this is true, it is still the case that for the current equity holders to be as well off as before, the required rate of return on equity must be earned on the total amount of equity raised including the extra number of shares that must be sold to defray new issuance costs.

Mr. Watkins second argument is that around the time of the 2002 equity issue, the price of the shares rose suggesting no dilutive effect. The problem with this line of argument is that the stock price is influenced by many factors. I have already indicated that during the period in question, low beta stocks earned higher rates of return than high beta stocks as investors changed their views about the growth possibilities from "high growth" companies associated with the Internet. What is needed to assess the costs of any new issuance of shares is what would have happened "other things being equal." In practice, other effects are never either equal or neutral in their net effect.

Q. MR. WATKINS CLAIMS THAT YOUR SAMPLE OF LARGE TELEPHONE COMPANIES IS REALLY RISKIER THAN SCE&G BECAUSE THEY ENGAGE IN UNREGULATED ACTIVITIES SUCH AS CELLULAR WIRELESS OPERATIONS. WHY DO YOU THINK THESE COMPANIES ARE LESS RISKY?

A. It is true that the large telephone companies engage in unregulated activities. Let me assure the Commission, however, that telephone companies with significant wireless activities are considered less risky precisely because of the diversification from wire line dependence and the greater growth associated with wireless. Moreover, I would repeat that larger firms tend to have smaller required rates of return than small firms. This empirical fact of life is not confined to microcap companies as Mr. Watkins suggests (Watkins, p. 40). Eugene Fama and Kenneth French (Journal of Finance, June 1992) divided all stocks into deciles depending on their equity capitalizations. As shown in Figure 1, there is a consistent relationship between size of company and equity rate of return. As the size of the company gets larger, the rate of return earned by investors declines.

Figure 1



Average Monthly Returns vs. Size: 1963–90

Portfolios of smaller firms have tended to produce higher rates of return than portfolios of larger firms.

Source: Burton G. Malkiel. *A Random Walk Down Wall Street*, 8th Ed.
W.W. Norton, 2004, p. 260.

Q. MR. WATKINS SUGGESTS THAT FLOTATION COSTS ARE ALREADY INCLUDED WHEN ONE DOES A DCF ANALYSIS TO ESTIMATE THE COST OF CAPITAL. DO YOU AGREE?

A. I do not. Let me repeat the analysis contained in my direct testimony. Suppose XYZ Company had $1000 of assets and market value of equity and had a 10 percent cost of capital. [It earned 10 percent on its assets ($100) and paid out the whole amount to its shareholders $100/$1,000 = 10%]. Now suppose it was planning to double its capacity by raising $1000 in new equity. We calculated that the cost of capital, 10 percent, was appropriate and that if the new capacity earned $100 per year (10 percent), the stockholders would be just as well off as before. But now suppose that flotation costs (underwriting costs, market price discounts to raise new capital, fees, etc.) were 4 ¼ percent so that if $1000 gross amounts were raised (approximately the cost of the last equity offering), the company would receive a net amount of only $957.50. Note that now the appropriate cut off rate for new investment is not 10 percent but rather 10.44 percent calculated as follows:

$$\frac{\text{Earnings Needed To Make Stocholders As Well Off As Before}}{\text{Net Amount Raised}} = \frac{\$100}{\$957.50} = 10.44\%$$

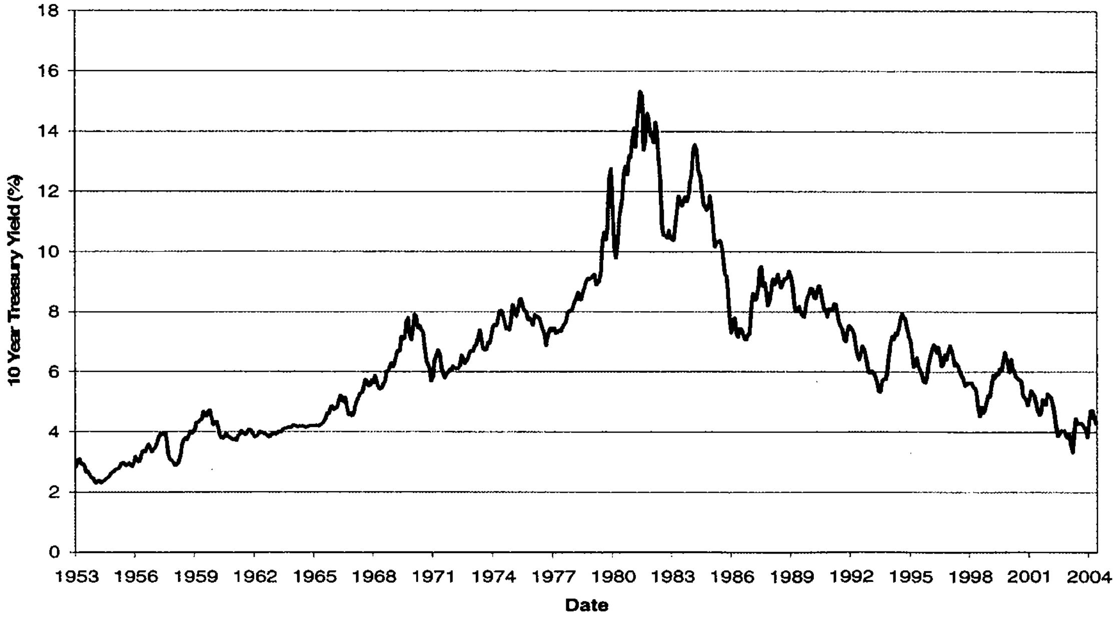
A similar calculation would be required for the debt cost of capital if new debt is to be raised. This is the adjustment for flotation costs that I have used. Note that the flotation costs are not already included in the $1,000 market value of equity. Consequently, flotation costs apply to all outstanding equity and is a permanent cost that in my judgment should be taken into account in estimating a company's cost of equity capital, as I have done in my prefiled direct testimony. The use of 4.25 percent for flotation costs is certainly appropriate given SCANA's recent experience in floating an equity offering. Further, in my experience a cost of 4.25 percent is quite reasonable and is a conservative percentage for flotation costs.

Q. MR. WATKINS TAKES ISSUE WITH YOUR STATEMENT THAT CURRENT INTEREST RATES ARE WELL BELOW NORMAL. CAN YOU SUPPORT YOUR STATEMENT?

A. Please see Figure 2. It shows clearly that the 10-Year Treasury yield is substantially below its historical average and is also below the levels that prevailed during 2001 and 2002. In fact, the mean 10 year treasury yield in 2001 was approximately 5.01 percent; in 2002 the mean was approximately 4.59 percent; and on October 22, 2004 the 10 year treasury yield closed at 3.99 percent. The facts support my previous statement that current interest rates for the 10 year Treasury Bill are low. Further, my opinion remains firm that this low interest rate environment is unlikely to persist.

Figure 2

Historical 10-Year Treasury Yield
April 1953 – Sept 2004



Source: Federal Reserve Board

*Note: Interest Rates, 10-year constant maturity securities, % p.a.

Q. MR. WATKINS ARGUES THAT DURING THE RECENT PERIOD WHEN THE FEDERAL RESERVE HAS BEEN RAISING SHORT-TERM RATES, LONG-TERM RATES HAVE ACTUALLY FALLEN. WILL LONG-TERM RATES REMAIN LOW AS SHORT-TERM RATES CONTINUE TO RISE AS THE FEDERAL RESERVE HAS SIGNALED?

A. Mr. Watkins is arguing from a short particular period and implies that our experience during the late summer and fall of 2004 will be repeated. In fact, there is a very strong, positive correlation between short and long rates. It is true that long rates have fallen recently at the same time short rates have risen. This is a very unusual event, however, and probably reflects what the Federal Reserve has described as an unexpected "soft patch" in economic activity. Figure 2 makes very clear that long rates in the United States today are unusually low.

Q. MR. WATKINS SUGGESTS THAT COST OF CAPITAL ESTIMATES SHOULD NOT BE MADE AT A SINGLE POINT IN TIME BUT ARE BETTER MADE ON THE BASES OF AN AVERAGE OVER TIME. DO YOU AGREE?

A. I believe Mr. Watkins' argument is reasonable, but one would not expect meaningful change unless there are significant events impacting the peer companies. In fact, prior to preparing my testimony I calculated estimated required rates of return on more than one date. I reported my estimates as of a single date corresponding closely to the date the final report was written. My estimates for other dates were very similar, however. Please refer to Exhibit No. ___ (BGM-3) which shows estimates both before and after the estimates provided in Tables 2, 3 and 4 in my prefiled direct testimony. This exhibit clearly shows that the rates of return from these estimates performed at varying times are quite similar.

Q. MR. WATKINS TAKES ISSUE WITH YOUR VIEW THAT SOME CONSIDERATION SHOULD BE GIVEN TO THE FACT THAT A PART OF THE SCE&G PLANT WAS PUT IN PLACE WHEN THE ALLOWED RATE OF RETURN WAS HIGHER (WATKINS, PP. 44-45). WATKINS CLAIMS THAT YOUR VIEW IS "CONTRARY TO THE PRINCIPLES AND PRECEDENTS THAT GUIDE ECONOMISTS IN ESTIMATING A FAIR RATE OF RETURN" (P. 45). PLEASE COMMENT ON HIS ARGUMENT.

A. Let me answer Mr. Watkins by referring to his specific illustration. He suggests that if he built his home in 1988 when mortgage rates were 9 ½ percent, my logic would argue that the bank will continue to charge the same rate today. In fact, if the mortgage stayed in place, he would have to pay 9 ½ percent. But individuals are able to refinance their mortgages (usually after the payment of considerable fees). Corporations typically have so-called "non-callable" features when they issue debt that prevents them from refinancing at lower rates, at least for some substantial period of time. I have been advised that this statement is in fact true for SCANA as I would expect. In contrast to debt, however, equity issues have a permanent life. The company cannot recall the equity. Thus, Mr. Watkins is making a false analogy in criticizing my logic.

Q. DOES MR. WATKINS ARGUMENT THAT COST OF CAPITAL ESTIMATES NOT BE TAKEN AT A SINGLE POINT IN TIME HAVE IMPLICATIONS FOR YOUR ARGUMENT THAT THE COMMISSION SHOULD GIVE SOME WEIGHT TO ITS 2002 DETERMINATION?

A. Indeed, it does. Taking Mr. Watkins argument to its logical extreme, the appropriate cost of capital should be measured not at an instant in time, nor even over several months, but should also give some weight to even earlier periods. Thus, some weight should be given to years such as 2002 and earlier during which many capital investments were made by SCE&G. Mr. Watkins' argument really supports my view that the Commission should adjust rates gradually. Thus, while considerable emphasis should obviously be given to cost of capital estimates under current (low interest) market conditions, some weight should also be assigned to periods in the recent past. Hence, some gradualism in the adjustment of allowed rates of return is appropriate.

In support of this argument, Exhibit No. __ (BGM-4) reports additional analyzes using the DCF approach for the Osborne Peer Group reported in Table 2, the large utility companies reported in Table 3, and the large telephone companies reported in Table 4 in my prefiled direct testimony. This exhibit shows that the estimated cost of capital for all of these companies is lower on July 23, 2004 than was true on July 23 in 2002 and 2000. The mean of the three time periods analyzed reflects a more normal cost of capital than we see in the current low interest rate environment. This data supports the view that gradually reducing rates is an appropriate and reasonable strategy and also supports my argument that a range of returns is preferable to a point estimate of the cost of capital.

Further, while the range and mid-point for the return on common equity is below my recommendation in my prefiled direct testimony, the agreement that has been reached with the Commission Staff seems to me to be entirely appropriate and within a range of reasonable returns in the current low interest rate environment.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

Exhibit No. __ (BGM-3)
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Cost of Capital Estimates

	1	2*	3
	5/17/2004	7/1/2004	7/23/2004
Osborne Peer Group	10.6	10.5	10.5
Malkiel Large Utilities	10.0	9.9	9.8
Malkiel Telecoms	10.1	9.9	10.5

* The results from this analysis were reported in Tables 2, 3, and 4 in my prefiled direct testimony in this docket.

Exhibit No. __ (BGM-4)

Cost of Capital Estimates at Various Times

	7/23/2004	7/23/2002	7/23/2000	Mean
Osborne Peer Group	10.5	13.4	13.3	12.4
Malkiel Large Utilities	9.8	14.7	13.5	12.7
Malkiel Telecoms	10.5	12.2	15.2	12.6